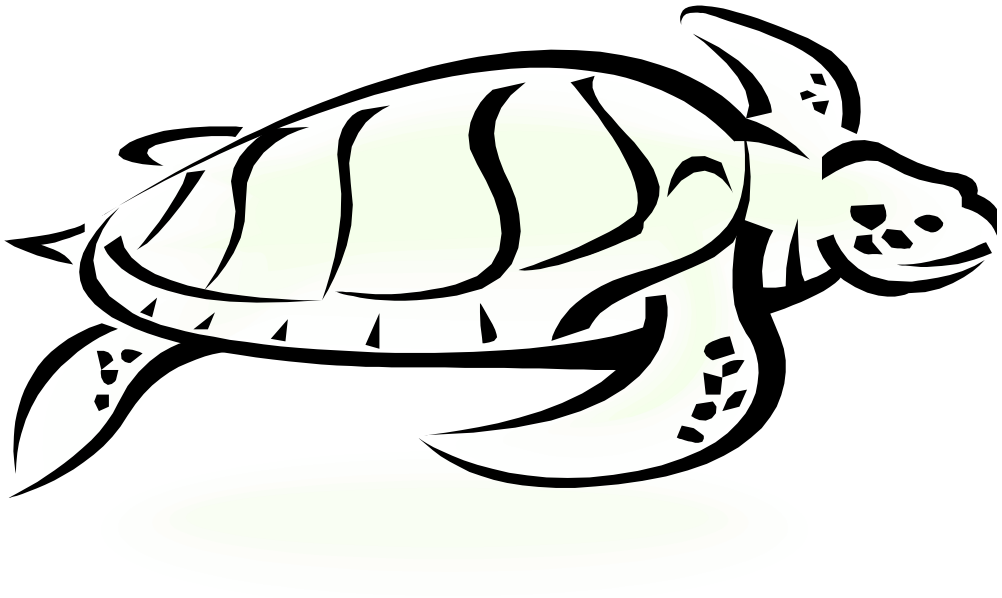
ANNUAL SEA TURTLE MONITORING REPORT
NEW WORK & MAINTENANCE DREDGING
GULF OF MEXICO COAST
MOBILE DISTRICT
FISCAL YEAR 2011



ANNUAL SEA TURTLE MONITORING REPORT
MOBILE DISTRICT
FOR GULF OF MEXICO PROJECTS
NEW WORK & MAINTENANCE DREDGING
FISCAL YEAR 2011 (Oct 1, 2010- Sept 30, 2011)

INTRODUCTION

This report is submitted in fulfillment of requirements of the Endangered Species Act (ESA) and the Section 7 Consultation - Biological Opinion concerning Dredging of Gulf of Mexico Navigation Channels and Sand Mining ("Borrow") Areas Using Hopper Dredges by U.S. Army Corps of Engineers (USACE) Galveston, New Orleans, Mobile, and Jacksonville Districts (Consultation Number F/SER/2000/01287) dated November 19, 2003 and amended on June 24, 2005 and January 9, 2007. Specifically, this report summarizes hopper dredging operations in Fiscal Year (FY) 2011 within the Mobile District, and is submitted in compliance with Reasonable and Prudent Measure, Nos. 3 and 9.

The following Mobile District Civil Works hopper new work & maintenance dredging projects were conducted in FY 2011. No Civil Works shore protection projects were conducted using a hopper dredge in FY 2011.

Mobile Harbor	September 27, 2010 – March 13, 2011 May 24, 2011 – June 26, 2011 September 7, 2011 – September 21, 2011
Gulfport Harbor	October 1, 2010 – October 7, 2011

No Regulatory hopper dredging work was conducted by the Mobile District in FY 2011.

The use of hopper dredges to maintain these navigation projects is necessary because of three factors: safety, weather conditions, and productivity. These factors are closely interrelated; however, the emphasis is placed on safety.

The dredges operating in navigation channels must be highly mobile to rapidly maneuver out of the way of other vessels. Pipeline cutterhead dredges are not self-propelled, and are held into position with spuds. Furthermore, the swing of the cutterhead is controlled by cables attached to the cutterhead arm. These cables are anchored along the outer limits of the channel to be dredged. Prior to moving the dredge, tenders must raise the anchors, and a towboat must be fastened to the dredge. These characteristics prevent the pipeline dredge from quickly moving out of the channel when other vessels approach. From a practical standpoint, dredges are generally not relocated for normal ship traffic; rather, dredging may be interrupted, but the

dredge remains a stationary obstruction in half of the channel. This situation is encountered in inland bays and waterways. The use of hopper dredges avoids such a stationary obstruction.

Weather conditions also affect the safety of the dredge and crew. Pipeline dredges were not designed to operate in open-sea conditions (such as the bar areas). Due to the reasons stated above, these dredges cannot rapidly demobilize in harsh weather, for example, as a hurricane approaches. The pipelines used to transport the dredged material to the placement sites would also be highly susceptible to breaking during rough weather. Even in relatively sheltered bays, cutterhead dredges often stop dredging in rough weather, and during frontal passages. During these periods, only water is pumped to keep tension on the pipelines to prevent breaking. In the open Gulf of Mexico, this precaution would not be effective, even if it were possible to leave the dredge offshore. During relatively calm weather conditions, only the largest cutterhead dredges would be able to operate efficiently. Sea swells make it difficult to control the depth of the cutterhead; consequently, this affects the dredging operation.

Productivity of the dredging operation is important because the purpose of dredging is to remove shoals and provide a safe depth for waterborne traffic. The use of pipeline dredges in the open Gulf of Mexico would result in frequent relocations, or other interruptions, due to weather and traffic conditions. Consequently, it would take longer to remove shoals, which present a hazard to safe navigation. The longer the time to remove the shoals, the longer a dredge must be on site to maintain the channel. The presence of the dredge and pipeline, themselves, present an obstruction to safe navigation. For these reasons, hopper dredges are used to maintain deep-draft entrance channels and construct many shore protection projects in the Mobile District.

The Mobile District periodically has to schedule hopper-dredging operations outside of the required December 1 through April 15 window due to the lack of equipment (dredges are on the Atlantic coast during this described period). The Mobile District tries to schedule as much of its hopper dredging during the December 1 through April 15 timeframe as possible. However, it is impossible to schedule all hopper-dredging projects during this time frame, due to the availability of the hopper dredge fleet. Hopper dredging priorities for the Mobile District are developed in concert with other USACE Districts that conduct these operations along the Atlantic and Gulf Coasts. The priorities are determined after considering the dredging needs and resident sea turtle populations within the various Districts.

TURTLE MONITORING PROGRAM

A result of the consultation process was the requirement to document turtle takes by the dredges. In order to accomplish this task, before hopper dredging operations commenced, they were equipped such that all inflows and overflows would be screened. The configuration and location of the screens depends upon the construction of the dredge. The starting mesh size of this screening is 4-inches by 4-inches. Additionally, around-the-clock monitoring by National Marine Fisheries Service (NMFS)-approved protected species observer(s) was conducted to

identify any turtles or turtle parts that were caught on these screens. Draghead deflectors were also deployed to deflect any turtles that may happen to be in, or near, the path of the draghead during excavation. The design of the deflectors is such that a sediment riffle is created ahead of the draghead, cushioning any contact with turtles thereby preventing injuries.

The observers inspected and cleaned all inflow and overflow screening at the end of each load. Dragheads and deflectors were also inspected immediately after each load, and dredge personnel were informed if repairs were necessary. Data sheets were completed daily, detailing all biological samples and debris found in the screening and dragheads. The observers also recorded the start, end and discharge times for each load, the specific location of the dredging area, the type of material being dredged, weather, tide and water temperature data, the condition of the screening, and any other pertinent information. Any sea turtle encounters or takes were described on a separate incident report form. Additionally, all incidents were photographed and diagrams were made of the specimen. Once documentation had been collected, dead specimens were properly discarded by the NMFS-approved protected species observer(s).

A bridge watch for sea turtles and marine mammals was maintained during all daylight hours, except when the observer was off the bridge, cleaning and inspecting the screens and dragheads. All sightings of cetaceans and sea turtles were recorded in a bridge watch logbook.

SCREEN CONFIGURATIONS

Turtle monitoring activities were conducted aboard seven (7) different hopper or trawl vessels during FY 2011. These were the *Glenn Edwards, Bayport, Newport, Columbia, Capt. Wick, Lady Paige and Old Timer.* The hopper vessels were required to have rigid draghead deflectors, and 100% inflow screening or overflow screening with openings starting at 4" x 4."

PROJECTS

Civil Works Projects in FY 2011

Gulfport Harbor- Bar Channel
Bayport, Glenn Edwards, Newport, Capt Wick, Lady Paige and Old Timer

On September 30, 2010, the *Bayport* began work on the Gulfport Harbor- Bar Channel Widening under contract W91278-10-D-0035 (T.O.# 002). The *Bayport* continued dredging through to December 18, 2010, and then April 7, 2011 through to May 18, 2011, and then June 26, 2011 through to July 19, 2011; for a total of 146 dredging days, 1182 loads dredged and 1,458,865 cubic yards removed from the channel. The *Glenn Edwards* began dredging on November 5, 2010 and continued through to November 22, 2010; for a total of 18 dredging days, 100 loads removed and 353,616 cubic yards removed from the channel. The *Newport* began dredging on December 23, 2010 and continued through to January 13, 2011, for a total of 22 dredging days, 271 loads removed and 287, 519 cubic yards removed from the channel.

On November 22, 2010, the *Glenn Edwards* continued work on Gulfport Harbor Improvements under contract W91278-10-D-0035 (T.O. # 001). The *Glenn Edwards* continued dredging through to May 6, 2011, and then August 18, 2011 through to October 7, 2011; for a total of 217 dredging days, 932 loads removed and 5,221,000 cubic yards removed from the channel.

The contractor dredged approximately 7,321,000 cubic yards for the entire contract. The contract was completed on October 7, 2011. A total of 2485 loads of dredged material was collected during 403 total dredging days and deposited in authorized open water disposal area(s) in Mississippi and Louisiana. The required depth of dredging is 38 feet below Mean Lower Low Water (MLLW) with 2 feet of advanced maintenance dredging and 2 feet of allowable overdepth dredging.

The dredge was equipped with rigid draghead turtle deflectors, and 100% inflow screening with a 4" square mesh. NMFS-approved protected species observers provided 24-hour/day monitoring of dragheads and screens for each load cycle. The observers were employed by Coastwise Consulting, Inc. under a subcontract to the government. Pre-dredge trawling began on September 28, 2010 at 1617 hours by the *Capt Wick*. Dredging commenced on September 30, 2010 at 1406 hours. Five (5) loggerhead turtles were captured and relocated before dredging commenced.

At the start of fiscal year 2011, relocation trawling by *Capt. Wick, Lady Paige and Old Timer* (though not necessarily all at the same time) was conducted around the clock during hopper dredging for the time period of October 1, 2010 thru project completion (of T.O. #2) on July 29, 2011. Trawling was ceased after dredging operations moved to areas where turtles are not normally taken or relocated (moved from the Bar to the Bay Channel). All trawling was properly conducted and supervised (i.e., observing trawl speed and tow-time limits, and taking adequate precautions in the release of captured animals). Ninety-two (92) sea turtles (71 Kemp's Ridley (*Lepidochelys kempii*), 20 Loggerhead(s) (*Caretta caretta*), 1 Green (*Chelonia mydas*)) and one (1) Gulf sturgeon (*Acipenser oxyrinchus desotoi)* was successfully captured and relocated during this time period.

A bottlenose dolphin (*Tursiops truncates)* 'take' was experienced on July 25, 2011, by the *Capt Wick*. It was male, 250 cm snout to fluke notch, and was transported to the Institute for Marine Mammal Studies in Gulfport for necropsy. All trawling protocols were closely reviewed. All of the trawlers were rigged with tangle-free lazy lines. Dolphins have been documented becoming entangled in the lazy lines of otter trawl rigs while playing and foraging behind trawlers, but this is extremely rare. It is even more anomalous for one to be found in the net.

During the performance of this dredging, one (1) lethal loggerhead turtle 'take' was experienced by the *Bayport*. The 'take' occurred on October 5, 2010, in load No. 41. The water temperature during this take was 23.4 degrees Celsius.

Detailed information for this project can be accessed from the USACE Sea Turtle Data Warehouse website – specifically at http://el.erdc.usace.army.mil/seaturtles.

Mobile Harbor
Columbia

On September 27, 2010 the *Columbia* continued work on Mobile Harbor Bay Channel on contract W91278-10-D-0099 (Task # 001). The contractor dredged approximately 1,609,925 cubic yards for the entire contract. The contract was completed on March 13, 2011. A total of 616 loads of dredged material was collected during 167 total dredging days and deposited in authorized open water disposal area(s). The required depth of dredging was 45 feet below MLLW with 2 feet of advanced maintenance dredging and 2 feet of allowable overdepth dredging.

The dredge was equipped with rigid draghead turtle deflectors, and 100% inflow screening with a 4" square mesh. NMFS-approved protected species observers provided 24-hour/day monitoring of dragheads and screens for each load cycle. The observers were employed by REMSA, Inc. under a subcontract to the government. No relocation trawling was conducted during this work.

During the performance of this dredging, no lethal takes were observed.

Detailed information for this project can be accessed from the USACE Sea Turtle Data Warehouse website – specifically at http://el.erdc.usace.army.mil/seaturtles.

Mobile Harbor
Glen Edwards, Bayport, and Capt Wick

On May 27, 2011 the *Glenn Edwards* continued work on Mobile Harbor Bay Channel under contract W912EP-11-D-0006 (Task # CK01). The contractor dredged approximately 1,252,074 cubic yards (cys) for the entire contract. The entire contract was completed on September 21, 2011. The *Glenn Edwards* dredged from May 27, 2011 through June 26, 2011, for a total of 30 dredging days, 93 loads removed and 539,509 cubic yards removed during that time period. The *Bayport* began dredging on May 24, 2011 and dredged through June 26, 2011, for a total of 33 dredging days, 112 loads removed and 239,577 cubic yards removed during that time period.

The contract was modified to include additional dredging time. The *Bayport* returned to begin dredging the Mobile Harbor Bar Channel on September 7, 2011 and dredged through September 21, 2011, for a total of 15 dredging days, 132 loads removed and 472,988 cubic yards removed during that time period. The required depth of dredging was 45 feet below MLLW with 2 feet of advanced maintenance dredging and 2 feet of allowable overdepth dredging. Pre-dredge trawling began on September 6, 2011 at 1228 hours by the *Capt Wick*. Relocation trawling by *Capt. Wick* continued around the clock during hopper dredging for the time period of September 6, 2011 thru project completion on September 21, 2011. Trawling was ceased with completion of dredging operations. All trawling was properly conducted and supervised (i.e., observing trawl speed and tow-time limits, and taking adequate precautions in the release of captured animals). One (1) Kemp's Ridley sea turtle (*Lepidochelys kempii*) was successfully

captured and relocated during this time period. No other endangered species were encountered during this period of relocation trawling.

The dredge was equipped with rigid draghead turtle deflectors, and 100% inflow screening with a 4" square mesh. NMFS-approved protected species observers provided 24-hour/day monitoring of dragheads and screens for each load cycle. The observers were employed by Coastwise Consulting, Inc. under a subcontract to the government. No relocation trawling was conducted during this work.

During the performance of this dredging, no lethal takes were observed.

Detailed information for this project can be accessed from the USACE Sea Turtle Data Warehouse website – specifically at http://el.erdc.usace.army.mil/seaturtles.

Regulatory Projects in FY 2011

No hopper dredging work was performed under the Mobile District Regulatory program during FY 2011.

SUMMARY

During Fiscal Year 2011, three (3) new work and maintenance-dredging projects were constructed using hopper dredges. In FY 2011, one (1) turtle was taken lethally by the dredging of these projects. Relocation trawling was conducted during two (2) of these civil works dredging projects. In all, ninety-three (93) sea turtles and one (1) Gulf sturgeon were successfully relocated (no evidence of serious injury or mortality). Table #1 summarizes some of the costs associated with the implementation of the Terms and Conditions of the GRBO. Table #2 summarizes lethal turtle encounter(s). Table #3 summarizes the catch per unit effort for relocation trawling efforts associated with projects utilizing a hopper dredge.

TABLE #1 FY 2011 COSTS ASSOCIATED WITH PROTECTION OF SEA TURTLES DURING MOBILE DISTRICT HOPPER DREDGING		
PROJECT	**COST OF OBSERVER**	**COST OF RELOCATION EFFORTS**
Gulfport	$241,800	$584,000
Mobile	$160,400	$61,000
Total	**$402,200**	**$645,000**
	Total Observer + Relocation Efforts =	**$1,047,200**

TABLE #2 FY 2011 INCIDENTAL TAKES OF SEA TURTLES & GULF STURGEON MOBILE DISTRICT MAINTENANCE DREDGING								
Date	**Project**	**Dredge/Trawl**	**Water Temp. (°C)**	**Gulf sturgeon**	**Kemp's ridley**	**Logger head**	**Green**	**Leather back**
10/05/10	Gulfport	Bayport/Capt Wick	23.4			1		
			Totals	0	0	1	0	0

TABLE #3
FY 2011 CATCH PER UNIT EFFORT – TRAWLING VS SEA TURTLES & GULF STURGEON
MOBILE DISTRICT MAINTENANCE DREDGING

Project Name	Number of Tows	Number of Turtles Captured	Number of Gulf sturgeon Captured	Catch per Unit Effort
Gulfport	3952	92	1	0.0235
Mobile	322	1	0	0.0031
TOTALS	4274	93	1	0.0219